

In [1]: 1. Perform the following operations using Python on the Facebook metrics

- Create data subsets
- Merge Data
- Sort Data
- Transposing Data
- Shape **and** reshape Data

Cell In [1], line 1

1. Perform the following operations using Python on the Facebook metrics data sets

SyntaxError: invalid syntax

In [2]: pip install pandas

Requirement already satisfied: pandas in c:\users\admin\appdata\local\programs\python\python310\lib\site-packages (1.5.1)
 Requirement already satisfied: pytz>=2020.1 in c:\users\admin\appdata\local\programs\python\python310\lib\site-packages (from pandas) (2022.5)
 Requirement already satisfied: python-dateutil>=2.8.1 in c:\users\admin\appdata\local\programs\python\python310\lib\site-packages (from pandas) (2.8.2)
 Requirement already satisfied: numpy>=1.21.0 in c:\users\admin\appdata\local\programs\python\python310\lib\site-packages (from pandas) (1.23.4)
 Requirement already satisfied: six>=1.5 in c:\users\admin\appdata\local\programs\python\python310\lib\site-packages (from python-dateutil>=2.8.1->pandas) (1.16.0)
 Note: you may need to restart the kernel to use updated packages.

[notice] A new release of pip available: 22.2.2 -> 23.1.2

[notice] To update, run: C:\Users\Admin\AppData\Local\Programs\Python\Python310\python.exe -m pip install --upgrade pip

In [3]: pwd

Out[3]: 'C:\\Users\\Admin'

In [5]: **import** pandas **as** pd
import numpy **as** np
 df = pd.read_csv("dataset_Facebook.csv")

```
In [10]:  import pandas as pd
import numpy as np
df = pd.read_csv("dataset_Facebook.csv")
df
```

Out[10]:

	Page total likes;Type;Category;Post Month;Post Weekday;Post Hour;Paid;Lifetime Post Total Reach;Lifetime Post Total Impressions;Lifetime Engaged Users;Lifetime Post Consumers;Lifetime Post Consumptions;Lifetime Post Impressions by people who have liked your Page;Lifetime Post reach by people who like your Page;Lifetime People who have liked your Page and engaged with your post;comment;like;share;Total Interactions
0	139441;Photo;2;12;4;3;0;2752;5091;178;109;159;...
1	139441;Status;2;12;3;10;0;10460;19057;1457;136...
2	139441;Photo;3;12;3;3;0;2413;4373;177;113;154;...
3	139441;Photo;2;12;2;10;1;50128;87991;2211;790;...
4	139441;Photo;2;12;2;3;0;7244;13594;671;410;580...
...	...
495	85093;Photo;3;1;7;2;0;4684;7536;733;708;985;47...
496	81370;Photo;2;1;5;8;0;3480;6229;537;508;687;39...
497	81370;Photo;1;1;5;2;0;3778;7216;625;572;795;47...
498	81370;Photo;3;1;4;11;0;4156;7564;626;574;832;4...
499	81370;Photo;2;1;4;4;4;4188;7292;564;524;743;386...

500 rows × 1 columns

```
In [11]: import pandas as pd
import numpy as np
df = pd.read_csv("dataset_Facebook.csv", sep=";")
df
```

Out[11]:

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetim Engage User
0	139441	Photo	2	12	4	3	0.0	2752	5091	17
1	139441	Status	2	12	3	10	0.0	10460	19057	145
2	139441	Photo	3	12	3	3	0.0	2413	4373	17
3	139441	Photo	2	12	2	10	1.0	50128	87991	221
4	139441	Photo	2	12	2	3	0.0	7244	13594	67
...	
495	85093	Photo	3	1	7	2	0.0	4684	7536	73
496	81370	Photo	2	1	5	8	0.0	3480	6229	53
497	81370	Photo	1	1	5	2	0.0	3778	7216	62
498	81370	Photo	3	1	4	11	0.0	4156	7564	62
499	81370	Photo	2	1	4	4	NaN	4188	7292	56

500 rows × 19 columns

In [12]: `# Describing the Data Set`
`df.describe()`

Out[12]:

	Page total likes	Category	Post Month	Post Weekday	Post Hour	Paid	Lifeti Totz
count	500.000000	500.000000	500.000000	500.000000	500.000000	499.000000	50
mean	123194.176000	1.880000	7.038000	4.150000	7.840000	0.278557	1390
std	16272.813214	0.852675	3.307936	2.030701	4.368589	0.448739	2274
min	81370.000000	1.000000	1.000000	1.000000	1.000000	0.000000	23
25%	112676.000000	1.000000	4.000000	2.000000	3.000000	0.000000	331
50%	129600.000000	2.000000	7.000000	4.000000	9.000000	0.000000	528
75%	136393.000000	3.000000	10.000000	6.000000	11.000000	1.000000	1316
max	139441.000000	3.000000	12.000000	7.000000	23.000000	1.000000	18048

In [13]: `df.shape` *#Displays total no. of rows and columns in the dataseet*

Out[13]: (500, 19)

```
In [14]: #Creating the Subset  
# Subset -1  
df1=df[['Page total likes','Category','Post Month','Post Weekday']].loc[  
df1
```

Out[14]:

	Page total likes	Category	Post Month	Post Weekday
0	139441	2	12	4
1	139441	2	12	3
2	139441	3	12	3
3	139441	2	12	2
4	139441	2	12	2
5	139441	2	12	1
6	139441	3	12	1
7	139441	3	12	7
8	139441	2	12	7
9	139441	3	12	6
10	139441	2	12	5
11	139441	2	12	5
12	139441	2	12	5
13	139441	2	12	5
14	138414	2	12	4
15	138414	2	12	3

```
In [15]: #Creating the Subset  
# Subset -2  
df2=df[['Page total likes','Category','Post Month','Post Weekday']].loc[  
df2
```

Out[15]:

	Page total likes	Category	Post Month	Post Weekday
16	138414	3	12	3
17	138414	1	12	2
18	138414	3	12	2
19	138414	3	12	1
20	138414	2	12	1
21	138414	1	12	7
22	138414	1	12	7
23	138414	3	12	7
24	138414	2	12	6
25	138458	2	12	6
26	138458	2	12	5
27	138458	3	12	5
28	138895	2	12	5
29	138895	1	12	4
30	138895	2	12	4

```
In [16]: #Creating the Subset  
# Subset -3  
df3=df[['Page total likes','Category','Post Month','Post Weekday']].loc[  
df3
```

Out[16]:

	Page total likes	Category	Post Month	Post Weekday
31	138895	2	12	3
32	138895	3	12	3
33	138895	3	12	2
34	138895	1	12	2
35	138895	2	12	1
36	138895	3	12	1
37	138895	1	12	7
38	138895	2	12	7
39	138895	1	12	7
40	138895	2	12	6
41	138895	1	12	6
42	138353	1	12	5
43	138353	1	12	5
44	138353	1	12	4
45	138353	1	12	4
46	138353	1	12	3
47	138353	1	12	3
48	138353	1	12	2
49	138353	1	12	2
50	138353	2	11	1

```
In [17]:  #Merge Data  
# Merging (Concatenating) Subset-1,Subset-2,Subset-3  
merging=pd.concat([df1,df2,df3])  
merging
```


Out[17]:

	Page total likes	Category	Post Month	Post Weekday
0	139441	2	12	4
1	139441	2	12	3
2	139441	3	12	3
3	139441	2	12	2
4	139441	2	12	2
5	139441	2	12	1
6	139441	3	12	1
7	139441	3	12	7
8	139441	2	12	7
9	139441	3	12	6
10	139441	2	12	5
11	139441	2	12	5
12	139441	2	12	5
13	139441	2	12	5
14	138414	2	12	4
15	138414	2	12	3
16	138414	3	12	3
17	138414	1	12	2
18	138414	3	12	2
19	138414	3	12	1
20	138414	2	12	1
21	138414	1	12	7
22	138414	1	12	7
23	138414	3	12	7
24	138414	2	12	6
25	138458	2	12	6
26	138458	2	12	5
27	138458	3	12	5
28	138895	2	12	5
29	138895	1	12	4
30	138895	2	12	4
31	138895	2	12	3
32	138895	3	12	3
33	138895	3	12	2

	Page total likes	Category	Post Month	Post Weekday
34	138895	1	12	2
35	138895	2	12	1
36	138895	3	12	1
37	138895	1	12	7
38	138895	2	12	7
39	138895	1	12	7
40	138895	2	12	6
41	138895	1	12	6
42	138353	1	12	5
43	138353	1	12	5
44	138353	1	12	4
45	138353	1	12	4
46	138353	1	12	3
47	138353	1	12	3
48	138353	1	12	2
49	138353	1	12	2
50	138353	2	11	1

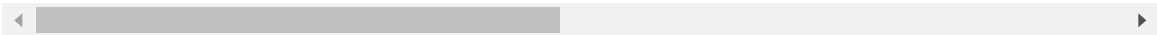
In [18]:


```
#Sort Data
sort_values=df.sort_values('Page total likes',ascending=False)
sort_values
```

Out[18]:

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetim Engage User
0	139441	Photo	2	12	4	3	0.0	2752	5091	17
8	139441	Status	2	12	7	3	0.0	11844	22538	153
1	139441	Status	2	12	3	10	0.0	10460	19057	145
12	139441	Photo	2	12	5	10	0.0	2847	5133	19
11	139441	Photo	2	12	5	10	0.0	3112	5590	20
...	
495	85093	Photo	3	1	7	2	0.0	4684	7536	73
496	81370	Photo	2	1	5	8	0.0	3480	6229	53
497	81370	Photo	1	1	5	2	0.0	3778	7216	62
498	81370	Photo	3	1	4	11	0.0	4156	7564	62
499	81370	Photo	2	1	4	4	NaN	4188	7292	56

500 rows × 19 columns



In [19]:  *#Transposing Data*
df.transpose()

Out[19]:

	0	1	2	3	4	5	6	7	8
Page total likes	139441	139441	139441	139441	139441	139441	139441	139441	139441
Type	Photo	Status	Photo	Photo	Photo	Status	Photo	Photo	Status
Category	2	2	3	2	2	2	3	3	2
Post Month	12	12	12	12	12	12	12	12	12
Post Weekday	4	3	3	2	2	1	1	7	7
Post Hour	3	10	3	10	3	9	3	9	3
Paid	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0
Lifetime Post Total Reach	2752	10460	2413	50128	7244	10472	11692	13720	11844
Lifetime Post Total Impressions	5091	19057	4373	87991	13594	20849	19479	24137	22538
Lifetime Engaged Users	178	1457	177	2211	671	1191	481	537	1530
Lifetime Post Consumers	109	1361	113	790	410	1073	265	232	1407
Lifetime Post Consumptions	159	1674	154	1119	580	1389	364	305	1692
Lifetime Post Impressions by people who have liked your Page	3078	11710	2812	61027	6228	16034	15432	19728	15220
Lifetime Post reach by people who like your Page	1640	6112	1503	32048	3200	7852	9328	11056	7912
Lifetime People who have liked your Page and engaged with your post	119	1108	132	1386	396	1016	379	422	1250
comment	4	5	0	58	19	1	3	0	0
like	79.0	130.0	66.0	1572.0	325.0	152.0	249.0	325.0	161.0
share	17.0	29.0	14.0	147.0	49.0	33.0	27.0	14.0	31.0
Total Interactions	100	164	80	1777	393	186	279	339	192

19 rows × 500 columns



```
In [20]: ▶ #Shaping
shaping=df.shape
shaping
```

```
Out[20]: (500, 19)
```

```
In [21]: ▶ #Reshaping
pivot_table = pd.pivot_table(df,index= ['Type', 'Category'], values='com
print(pivot_table)
```

		comment
Type	Category	
Link	1	2.900000
	2	2.000000
	3	2.000000
Photo	1	5.897297
	2	11.692308
	3	6.913333
Status	1	4.333333
	2	9.921053
	3	2.750000
Video	1	12.285714

```
In [22]: ▶ # Extra Command to Reshape data using array
reshaping_arr=np.array([1,2,3,4,5,6])
reshaping_arr.reshape(3,2)
```

```
Out[22]: array([[1, 2],
               [3, 4],
               [5, 6]])
```

```
In [23]: ▶ reshaping_arr=np.array([1,2,3,4,5,6,7,8,9,10])
reshaping_arr.reshape(5,2)
```

```
Out[23]: array([[ 1,  2],
               [ 3,  4],
               [ 5,  6],
               [ 7,  8],
               [ 9, 10]])
```

```
In [ ]: ▶
```

```
In [ ]: ▶
```